

and has since resided at Folkestone. Of late his health has gradually given way, and he died on January 23, at the age of fifty-eight. He was elected a Fellow of the Royal Society in 1880, and was an honorary member of several foreign meteorological societies. He was President of the Asiatic Society of Bengal in 1884-85.

That he was a man of considerable intellectual power is shown by the somewhat unusual range of scientific questions on which he has left works and papers. Besides his geological and meteorological reports, he wrote for the Indian Geological Survey descriptions of the *Nautilidae* and *Belemnitidae* of the South Indian cretaceous rocks, and he assisted the late Mr. J. W. Salter in describing the Palæontology of Niti. He was also author of several papers on recent mollusca; and amongst his works are two treatises, one on the "Physical Geography of India," largely used as a text-book in Indian schools, and the other "An Elementary Geography of India, Burma, and Ceylon," published as one of Macmillan's Geographical Series.

NOTES.

WE learn from Sydney that steady progress is being made with the Macleay Memorial Volume, and that it will probably be ready for issue about the end of March.

AN announcement comes from Chicago that Mr. Eadweard Muybridge, who, it will be remembered, visited this country some time since on behalf of the University of Pennsylvania, will give at intervals, from May to October, in the "Zoopraxographical Hall of the Exposition," a series of lectures on the science of animal locomotion, especially in its relation to design in art.

ON Thursday next, February 9, Prof. Patrick Geddes will begin, at the Royal Institution, a course of four lectures on the factors of organic evolution; and on Saturday week, February 18, Lord Rayleigh will begin a course of six lectures on sound and vibration.

A TRANSLATION of Prof. Weismann's new work on "The Germ-plasm," recently noticed in NATURE, will appear in the "Contemporary Science Series" in the course of a few weeks.

LAST week a deputation, representing the New Decimal Association, the Chambers of Commerce and Trades Unions, as well as various scientific institutions, waited upon Sir William Harcourt, Chancellor of the Exchequer, to urge the Government to adopt the decimal and metrical system of weights, measures, and coinage, or to appoint a committee of inquiry into the subject. Mr. S. Montagu, M.P., as president of the New Decimal Association, having introduced the deputation, said that forty years ago there was great apathy upon the subject, but since then there had been inquiries by Select Committees and Royal Commissions into the question of the decimal currency, and though the reports of those bodies were satisfactory, no action had followed. The system had been adopted in Germany, Austria-Hungary, and Scandinavia; and in England there was now a good popular demand, such as Mr. Goschen said six years ago he was waiting for. Men of science like Lord Kelvin, Sir Henry Roscoe, and Sir John Lubbock, and educationists like Sir Philip Magnus and Dr. Gladstone desired the reform in order to economise brain-power; representatives of commerce desired it to assist them in their competition with rival nations; and the working classes were awake to the fact that years of labour were wasted by their children being compelled to learn that which could be rendered unnecessary. Several members of the deputation, including Sir Philip Magnus,

having spoken, Sir William Harcourt replied. He said that every one who reflected on the question must see the great advantages which attach to the decimal system. But the practical difficulties in the way of the proposed change seemed to him for the present to be insurmountable. A decimal system was introduced into Europe by the French Revolution. That was a time when the whole of society was cast into the melting pot, and they changed, not only their notation, not only their metrical system, but the names of the months and the days of the week. The change in Germany took place, not in quiet times, but as a result of the unification of Germany. He believed that even in the United States of America the change was made consequent upon the establishment of the Federal system. He did not think that the habits of the people could be altered in quiet times. This applied very much to the measures as well as to the coinage. Sir William was ready as an individual to play his part in forwarding the progress of the decimal system and the metrical system; but the Government could do nothing in the matter. The people would have to be prepared for so great a change.

IT is worth noting that instruction in the principles of the decimal and metric systems is daily given in public elementary schools, and that this labour—as Mr. J. H. Yoxall, secretary of the National Union of Teachers, has pointed out in a letter to the *Times*—is imposed upon the children without hope of practical good to the community. Mr. Yoxall contends that if an Act of Parliament were to fix a date of five or ten years hence at which the decimal system should come into legal operation, the work of the schools and the precaution of the mercantile classes would by that time sufficiently prepare the way.

A DESTRUCTIVE earthquake occurred on Tuesday morning at the town of Zante. Several houses were totally destroyed, many more were partially wrecked, and there is hardly a building in the town which has not sustained damage in one form or another. The roof of the prison collapsed during the earthquake, and the guards had to be doubled to prevent the escape of the prisoners. The hospital was also so seriously damaged that it was deemed expedient to remove the patients. The shocks, which were general, were renewed again and again, and the whole population was thrown into a state of panic.

DURING the past week the temperature over these islands has been fairly high, the daily maxima often exceeding 50°, notwithstanding a temporary fall, amounting from 12° to 14° in Scotland and the midland counties of England, on Friday, accompanied by much fog in the south and east of England, while the air has been decidedly humid, the readings of the dry and wet bulb thermometers frequently showing little or no difference. These conditions have been due to deep depressions arriving from the Atlantic and passing in close proximity to our western and northern coasts. In those parts gales have been of almost daily occurrence, and on Sunday they extended as far as the English Channel. Rain has been frequent, but generally the fall has not been heavy, and the sky has generally been overcast and dull, although on Saturday the weather over the south of England was unusually bright and fine. The *Weekly Weather Report* of January 28 shows that the temperature exceeded the mean in all districts, the greatest excess being 4° in Scotland. Bright sunshine also exceeded the mean in some parts of Scotland and in the eastern portion of England, but in other parts of these islands there was a deficiency.

A MAP showing lines of equal magnetic declination for January 1, 1893, in England and Wales, has been very carefully prepared by Mr. W. Ellis, and published as a supplement to

the *Colliery Guardian* of January 6, 1893. The explanatory text states that, as before, the work depends on the magnetic surveys of Profs. Rücker and Thorpe. Mr. Ellis gives a table showing the relation between the diurnal variation of magnetic declination and sun-spots, as determined from the magnetic observations made at the Royal Observatory, Greenwich. The general mean at epochs of minima of sun-spots is 7.4 minutes, and at epochs of maxima 11.4 minutes of arc, and other magnetic elements show a similar relation. The period between successive epochs of maxima or of minima of sun-spots is well known to be on the average about 11 years, and the author points out the curious fact that the interval between the minimum and maximum is on the average $4\frac{1}{2}$ years, whilst from maximum to minimum it is 7 years. The relation existing between sun-spot maxima and minima and the diurnal magnetic variation has led many meteorologists to seek for some similar connection with meteorological phenomena, but Mr. Ellis states that no such relation has yet been conclusively established.

THE report of the administration of the Meteorological Department of the Government of India in 1891-92 shows continued activity and efficiency in all departments of the work, and bears testimony to the interest taken both by the public and by the *employés*. The number of observatories maintained by the Government at the end of the year was 165. As regards the actinometric work, an unusual amount has been done, owing to the favourable state of the weather, and the results have been forwarded to the Solar Physics Committee in London. The rainfall data are published month by month, and a large number of unsatisfactory rain gauges has been replaced by new ones. A larger amount of work under the head of marine meteorology has been done than in any previous year; several clerks are continually employed in collecting data from ships entering the various ports, and these observations have been utilised in preparing daily weather charts of the whole Indian area for a portion of the year. The systems of storm and flood warnings have been continued as in previous years, and observations have been taken in certain forests, in order to throw light on the influence of forest growth in modifying the distribution and amount of rainfall; a report upon this subject will shortly be prepared. Among the other papers being prepared for publication we note one on the relation between sun-spots and weather as shown by meteorological observations taken on board ships in the Bay of Bengal during the years 1855 to 1878.

At the meeting of the Royal Botanic Society of London on Saturday a plant of the Sisal hemp (*Agave rigida*) was shown from the Society's gardens. This plant is now extensively grown in the Bahamas and Central America for its fibre. The secretary said that until lately, with the exception of two or three fibre plants, as hemp and cotton, commerce depended upon wild plants for its supplies, but so great was the demand now for fibres for papermaking and other uses that it had been found necessary to grow them specially.

THE Sloyd Association of Great Britain met on Saturday to receive the annual report, to elect officers, and to appoint an examining body. It was agreed that "Sloyd" should be substituted for "Slöjd" in the name of the Association. The system of handiwork which the society is seeking to introduce into schools has already been pretty extensively adopted in this country, especially in the north of England. Mr. Harris stated at the meeting that it was being received with approval in many different parts of the world. He had received communications from Napier, New Zealand, and Lahore, India, as to its adoption in these places.

AN American writer who was present at the Galileo Festival in Padua gives a very interesting account of it in the *New York*

Nation. He refers to the speeches delivered in Italian by Sir Joseph Fayrer and Prof. George Darwin, to which we have already alluded. "They were," he says, "much appreciated by the audience: 'Parla bene!' 'Pronunzia bene!' one heard murmured in tones not devoid of surprise." The greatest orator of the occasion, according to this writer, was Prof. Schmurlo of Dorpat, in Russia. "The type of the lonely and ungainly scholar in appearance, he nevertheless spoke a few phrases so ultra-Italian in the ingenious gracefulness of their turn, that the audience went fairly wild with delight."

THE latest instalment of the Transactions of the Institution of Engineers and Shipbuilders in Scotland contains an interesting paper, by Mr. E. G. Carey, on the bridges of the Manchester Ship Canal. The paper is fully illustrated. The author notes that practically the whole of the bridge-work for this canal has been constructed in Glasgow from Scotch steel.

THE Smithsonian Institution has issued as one of its bulletins a full and very useful bibliography of the published writings of George Newbold Lawrence, the well-known ornithologist. The work has been done by Mr. L. S. Foster, who gives also a short sketch of Mr. Lawrence's career. Mr. Lawrence's collection of bird-skins is of great scientific value. It includes about 8000 specimens, and contains some three hundred types of new species of birds. The collection was deposited in the American Museum of Natural History, New York City, in May 1887. Mr. Foster says that the beneficial influence of the labours of Mr. Lawrence, with pen and pencil, on the progress of American ornithology, has been great and undisputed. It is particularly among the avifauna of the West Indies, Mexico, Central and South America, that his most strenuous efforts have been exerted.

IF we may trust a statement made on the authority of the Tokyo News Agency, it is not surprising that Japan is unwilling to be deprived of the privilege of fishing on the Korean coast. The number of Japanese boats engaged in the fishery is said to be no less than upwards of four thousand four hundred, of which about eighteen hundred have licenses. Their annual take averages from a million and a half of *yen* to two million value, and it is estimated that with more diligence and improved methods they might easily bring this figure to three or four millions.

IT is rather surprising that tobacco has been so little cultivated in Australia. The *Agricultural Gazette* of New South Wales, we are glad to see, has taken up the matter, and in its November number devotes to it a comparatively long and interesting paper. The writer of the article thinks that the climate of New South Wales is admirably suited to the growth of tobacco, and hopes that a sufficient quantity of it may hereafter be produced not only to satisfy local demands, but to open up a large and lucrative export trade.

ONE of the curious survivals of ancient prejudices in India is the intense dislike with which many high caste Hindus regard sea-voyages. It is even disputed whether a Brahmin who takes a sea-voyage does not lose caste. The Maharaja of Mysore has not only emancipated himself from this strange notion, but is doing his best to overcome it in others. He lately made a voyage to Calcutta, and took with him a number of orthodox Brahmins, as well as Brahmin officials of state.

MR. WALTER HOUGH, of Washington, notes in *Science* that among the collections from Mexico, Central and South America, exhibited in the Columbian Historical Exhibition at Madrid, he observed a number of oblong polished blocks of hard stone of unknown use, averaging $3\frac{1}{4}$ inches in length, $2\frac{1}{4}$ inches in width, and $1\frac{1}{4}$ inches in thickness. The broad sur-

faces of these stones are plane, bearing a number of grooves parallel to the length, forming ridges like those seen on Polynesian tapa mallets. The implements resemble closely, he thinks, those used by many different peoples in beating out fibrous bark for clothing, paper, &c. Mr. Hough suggests that they may have been used for purposes of this kind in prehistoric times, and that they may give some insight into the manufacture of the paper on which the Mexican codices are painted.

MUD GORGE, on the Hurnai route to Quetta, has been giving much trouble to the engineers engaged in the construction of the new railway. Landslips are frequent, and an unusually bad one has occurred within the last few weeks. On this occasion the hill, according to the *Pioneer Mail*, slipped in such a way "as to lift the rails bodily up and turn them over, sleepers uppermost." The mountain is said to be a great porous mass of clayey soil with large boulders imbedded therein, and it sucks in moisture like a sponge. After heavy rain it begins to move downwards, and even in dry weather disintegration goes on with disastrous results to the railway. New fissures are reported to have appeared hundreds of yards up the slopes above the line, and each of these indicates that thousands of tons of earth and boulders will sooner or later find a lower level. A committee of experts has been appointed by the Indian Government to examine the mountain thoroughly, and the *Pioneer Mail* truly says that "if they succeed in devising a means to conquer it they will achieve a notable feat in engineering."

DR. LOW, President of Columbia College, New York, has been stating in the *American Educational Review* his impressions as to the condition and tendencies of the higher education in the United States. One of the points on which he strongly insists is that a general college training should be considered necessary before students begin their University education in theology, law, and medicine. "The prophetic eye," he says, "can even now discern the day when a college education will be a condition precedent for entrance into the professional schools of the American university. This will not mean that only college-trained men will make good practitioners in law or medicine, for example, nor that only college-trained men are entitled to a professional education. It will rather mean, I think, that the university will then have fully realised its own obligation to the country to send forth into professional life, in all parts of the land, men of a thorough and wide equipment."

ARCHÆOLOGISTS have observed that in Greek statues the male eye is strongly arched, while the female eye has rather a flattened surface; and referring to accounts by the older anatomists who have affirmed such a difference to exist, they have seen in this a fresh proof of the exact observation of nature by the ancient Greeks. The rule is not without exceptions, for the cornea in the Zeus of Otricoli has quite a flat form. Herr Greef recently set himself (*Archiv für Anat.*) to inquire whether such a sexual difference actually exists, and from individual measurement of the radius of the cornea in the horizontal meridian, he gets an average of 7.83 mm. for men, and 7.82 mm. for women (Donders gives 7.858 and 7.799), so the difference is so small as to be imperceptible to the naked eye. Measurement of other dimensions gave but minute differences also. The author concludes that the Greeks (from artistic motives) did not in this case follow nature.

THE difference between the aspect of the sky at full moon and the clear and deep azure observed on a moonless night is explained by M. Clémence Royer in his "*Recherches d'Optique Physiologique et Physique*" on the basis of some observations made by M. Piltchikoff. In studying the polarising action of the moon on the atmosphere, the latter found that the propor-

tion of polarised light in the nocturnal sky diminishes continuously from the time of the full moon up to that of the new moon, when it becomes zero, subsequently to increase again until the time of full moon. There appears to be a struggle between the polarised light of the moon and the so-called natural light of the stars, and the proportion of polarised light sometimes reaches 62 per cent. The diffusing power of the atmosphere necessarily varies with the relative proportions of natural and of polarised light, since the latter is not capable of reflection in all directions. Hence we see why very serene but moonless nights may yet be relatively very clear, and the sky of a beautiful sombre blue, whereas the white light of the moon, reflected, diffused, and polarised, tends to give the sky a tint of a paler and somewhat greyish blue.

AT the last annual meeting of the American Association of Official Agricultural Chemists, the Proceedings of which have just been issued, Mr. N. T. Lupton referred in his presidential address to the immense phosphate beds in the south-western part of Florida. Last winter a visit was paid to some of the localities where deposits are found, and samples were collected for analysis. They were of two varieties, which may be called hard and soft. The hard variety consists of boulders of moderately hard rock, some of immense size, cemented together with white clay. A white and friable mass resembling kaolin is occasionally found. This is probably produced by the natural disintegration of the hard rock by rolling, attrition, or concussion. The deposits vary in thickness. A depth of 20 or 30 feet is not uncommon, and even a thickness of 50 feet has been found. As some, especially foreign, manufacturers object to buying phosphates which contain over 3 per cent. of oxides of iron and aluminium, large quantities of these materials have accumulated at the mines. A few manufacturers, aware of the agricultural value of South Carolina floats, have established mills in Florida for pulverising these soft aluminous deposits, which are sold to farmers for use without conversion into soluble phosphates. Experiments are now in progress on the Alabama Experiment Station, under control of the chemist, to determine the chemical composition and agricultural value of these soft phosphates when used alone with cotton seed and with cotton-seed meal. If decomposing organic matter, as is believed, renders insoluble phosphates available as plant food to any considerable extent, Mr. Lupton thinks that the question of cheap phosphates will be solved, and that the American farmer will be enabled to purchase fertilisers at a much less cost than at present.

MESSRS. W. H. ALLEN AND CO. have issued the thirty-seventh thousand of Dr. M. C. Cooke's "*Manual of Structural Botany*." The book is intended for the use of classes, schools, and private students.

THE February number of *Natural Science* includes, among other things, articles on some problems of the distribution of marine animals, by Otto Maas; on Pasteur's method of inoculation and its hypothetical explanation, by G. W. Bulman; the industries of the Maoris, by J. W. Davis; some recent researches on insect anatomy, by G. H. Carpenter; parasites on algæ, by G. Murray; the underground waste of the land, by H. B. Woodward; Owen (concluded), by A. S. Woodward; and the restoration of extinct animals.

THE following are the arrangements for science lectures at the Royal Victoria Hall during February:—Feb. 7, Mr. J. Scott Keltie, on Africa and its people; Feb. 14, Mr. E. Wethered, on interesting objects under a microscope; Feb. 21, Mr. J. T. Leon, on breathing and burning; Feb. 28, Dr. H. Forster Morley, on chemistry of life.

THE additions to the Zoological Society's Gardens during the past week include seven Azara's Opossums (*Didelphys azarae*)

from the Argentine Republic, presented by Mr. Hill; a Rough Terrapin (*Clemmys punctularia*) from Guiana, presented by Mr. J. J. Quelch, C.M.Z.S.; an American Milk Snake (*Coluber eximius*) from Tennessee, presented by Miss Winifred M. Middleton; a Virginian Eagle Owl (*Bubo maximus*) from South America, deposited; two Mouflons (*Ovis musimon*, ♂ ♀) from Corsica, received in exchange.

OUR ASTRONOMICAL COLUMN.

THE NAUTICAL ALMANAC FOR 1896.—The new superintendent of the *Nautical Almanac* office has introduced a much-needed reform into the first almanac, that for 1896, issued under his direction. The state of the *British Nautical Almanac* has long been severely criticised as being far from the best possible for navigational purposes both in form and contents, and by no means satisfactory from the astronomical standpoint. A letter addressed by the Shipmasters' Society to Dr. Hind, the late Superintendent, in November 1891, pointed out the advantage to navigators which would be offered by a work published at a popular price, and without that astronomical information which is of no use to sailors. Many low-priced almanacs are published, indistinctly printed, and having occasional errors in the figures, and an official trustworthy book was very desirable. In consequence of this representation the almanac is now published in two forms—as the complete almanac of former years, price 2s. 6d.; and as Part I. of the *Nautical Almanac*, specially suited for the use of sailors, price 1s.

The complete almanac has been revised and added to, many of the recommendations of the *Nautical Almanac* Committee of the Royal Astronomical Society, which reported to the Admiralty in 1891, having been adopted. The small short period terms of nutation have been tabulated, and, corresponding to that, additional day numbers are added so as to enable computers to include those small terms in the star corrections. The catalogue of stars from which the moon culminators and stars occulted by the moon are obtained has been revised and enlarged, and the mean places of the stars of this catalogue, which are used during the year, are also included. The elements of the occultations are given in a revised form similar to that adopted in most of the other astronomical ephemerides, so that the circumstances of an occultation for any position on the earth's surface can be computed with facility. There has been a general revision of the constants used.

The small almanac has been arranged by Mr. Downing in conference with the Hydrographer. As the guiding principle in publishing this was the minimum of change in the parts of the almanac which were to be extracted and published separately, there is still much in the volume that is not needed by sailors, but the omission of which would have necessitated the setting up of fresh type and much extra work at the *Nautical Almanac* office. The monthly part is printed unaltered, and consequently contains the sun's and moon's latitude and longitude, which are not required by sailors. The noon ephemerides for the brighter planets, Venus, Mars, Jupiter, and Saturn; the catalogue of mean places of stars, as well as the apparent places of the nine stars used for lunar distances; the eclipse section and the tables for navigation are then given. There is no doubt that the issue of this smaller work will confer a real benefit on the shipping community, and that it will soon win its way to popularity.

In announcing these changes to the Royal Astronomical Society, Mr. Downing expressed the hope of being able, through the economy of time effected by international co-operation in some of the work of the office, to make considerable future additions to the almanac without increasing the burden of the British taxpayer. The duplicate work done at Berlin, London, Paris, and Washington involves much waste of energy which might be more usefully expended: and as a step towards this, Mr. Downing, last summer, arranged with Prof. Newcomb, of Washington, to co-operate in some of the work of their respective almanacs, and the Admiralty have consented to this. It is to be hoped, in the interests of astronomy and of navigation, that the scheme may be greatly extended.

ECLIPSE PHOTOGRAPHY.—The results obtained by M. de la Baume Pluvinel at Salut Isles in 1889 (as given in his lecture which appeared in *NATURE* last week), when he photographed the corona with photographic actions varying from 185 to 13, and found the photographic action of 30 the most satisfactory;

do not agree with those of the English expedition obtained at the same time and place. The photographic actions on the plates exposed with the 20-inch mirror of 45-inches focus, by the late Father Perry, varied from 19.75 to 790 as calculated by the formula given by M. de la Baume Pluvinel, and in every case increase of photographic action gave greater extension of the corona. Mr. Rooney's plates, with the 4-inch lens of 61 inches focus, had been subjected to photographic actions varying from 1.11 to 177.77, and agreed with Father Perry's in giving greater extension with every increase of photographic action. The English results certainly justify the conclusion that greater photographic action is necessary to photograph those faint extensions of the corona which have been seen, but have hitherto eluded attempts to photograph them.

Mr. Burnham's experiments, alluded to by M. Pluvinel, do not assist us in this question. A certain absolute amount of light is necessary to give any appreciable photographic effect on the plate, and this seems to be the chief difficulty in obtaining photographs of the external corona. In Mr. Burnham's experiments he had too much light and had to cut down the exposure in order to get faint contrasts, but there was never any question of not having sufficient light to obtain any photographic effect. Captain Abney finds (*Phil. Trans.* vol. clxxx. A, page 314) that an abrupt change of $\frac{1}{2}$ per cent. in the intensity of light can be detected on a photograph, hence we may look upon a negative as a drawing built up of 200 different shades. Over exposure will of course prevent such faint contrasts as $\frac{1}{2}$ per cent. being detected, and under exposure will enable fainter contrasts to be seen, so long as the limit of minimum exposure necessary to produce any photographic effect is passed; but the evidence from the English expedition renders it extremely probable that even with the largest photographic action used this limit was not actually reached with the faintest extensions of the corona.

COMET HOLMES.—Dr. F. Cohn, writing about this comet from the Observatory in Königsberg on January 17, finds (*Astronomische Nachrichten*, No. 3146), with a 6-inch heliometer and a magnification of 65 times, that the nucleus is exactly as a star of the 8th magnitude. The correction to the ephemeris given below is, as he has deduced, $\Delta\alpha = -0.3s$, $\Delta\delta = -6''$.

Dr. R. Schorr, of the Hamburg Observatory, puts the nucleus down on the same date as a 7.2 magnitude star with a small nebulosity about it of 5" diameter, but on the 18th he found the comet showed a much larger coma, a measurement giving 87". The stellar nucleus was also estimated as 7.5 magnitude of a diameter 2".

The ephemeris of this comet is from Prof. Schulhof's calculations (*Astronomische Nachrichten*, No. 3140):—

1893.	R.A. app.	Decl. app.
	h. m. s.	° ' "
Feb. 2 ...	1 45 46.5 ...	+ 33 49 26
3 ...	47 16.6 ...	50 48
4 ...	48 47.3 ...	52 14
5 ...	50 18.6 ...	53 45
6 ...	51 50.4 ...	55 20
7 ...	53 22.8 ...	56 59
8 ...	54 55.8 ...	58 41
9 ...	1 56 29.3 ...	34 0 28

COMET BROOKS (NOVEMBER 19, 1892).—The following is an ephemeris for Comet Brooks for the ensuing week:—

1893.	R.A. app.	Decl. app.	Log r.	Log Δ.	Br.
	h. m. s.	° ' "			
Feb. 2 ...	23 56 48 ...	+ 34 27.7			
3 ...	23 59 13 ...	33 44.4 ...	0.1050 ...	0.1295 ...	1.90
4 ...	0 1 31 ...	33 3.3			
5 ...	3 42 ...	32 24.1 ...	0.1087 ...	0.1482 ...	1.71
6 ...	5 48 ...	31 46.4			
7 ...	7 48 ...	31 10.4			
8 ...	9 43 ...	30 35.8			
9 ...	0 11 33 ...	30 2.9 ...	0.1167 ...	0.1832 ...	1.40

THE ANDROMEDES.—Although Mr. Maclair Boraston was unfortunate in having bad weather on the nights of November 13 and 14 last, thus obscuring the Leonids, yet the magnificent shower of the Andromedes that he describes in *Astronomy and Astrophysics* for January should have recompensed him somewhat for "the great elevation of the radiant point, combined with a cloudless tropical sky, the absence of moonlight and the unobstructed view of the complete hemisphere, afforded the *ne plus ultra* of astronomical requirement." Observing in